

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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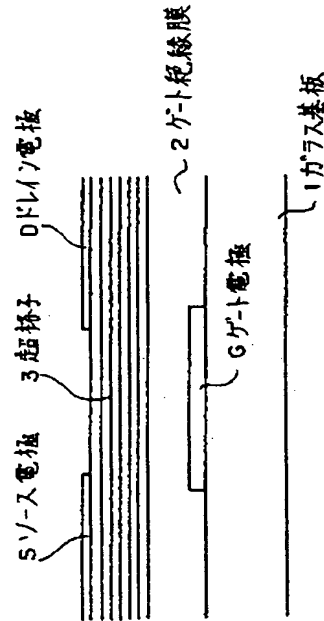
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H01L 29/80

TITLE : SUPERLATTICE THIN-FILM  
TRANSISTOR



ABSTRACT : PURPOSE: To obtain the titled transistor, photoconductivity thereof is inhibited and which is difficult to be subject to the effect of stray light and displays stable performance characteristics, by using a superlattice constituted by alternately laminating a large number of a-Si:H layers and a-SiN<sub>x</sub>:H layers as a semiconductor layer.

CONSTITUTION: A superlattice 3 organized by alternately laminating a large number of a-Si:H and a-SiN<sub>x</sub>:H is employed as a semiconductor layer in a thin-film transistor using an amorphous semiconductor layer. A gate electrode G is formed at a predetermined position on a substrate 1 consisting of glass, etc., a gate insulating film 2 composed of a-SiO<sub>2</sub>, etc. is laminated on the gate electrode and a-Si:H layers and a-SiN<sub>x</sub>:H layers having prescribed layer thickness (such as 10<sup>-</sup>~100<sup>-</sup>) are laminated alternately in a large number, and the superlattice 3, the whole layer thickness thereof is brought to approximately 2,500<sup>-</sup>, is shaped in a stratified manner. A source electrode S and a drain electrode D are formed at predetermined positions on the superlattice 3, and carriers flowing in the superlattice 3 are controlled by applied voltage to the gate electrode G between the source electrode S and the drain electrode D.

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